Honeywell

ST 3000 Smart Transmitter

Series 900 Remote Diaphragm Seals Models

STR93D	0 to 100 psid	0 to 7 bar
STR94G	0 to 500 psig	0 to 35 bar

34-ST-03-57
10/2002

Specification and Model Selection Guide

Introduction

In 1983, Honeywell introduced the first Smart Pressure Transmitter— the ST 3000®. In 1989, Honeywell launched the first all digital, bi-directional protocol for smart field devices. Today, its ST 3000 Series 900 Remote Seal Transmitters continue to bring proven "smart" technology to a wide spectrum of pressure measurement applications. For applications in which the transmitter must be mounted remotely from the process, Honeywell offers the remote seal line of gauge, absolute and differential pressure transmitters. Typical applications include level measurement in pressurized vessels in the chemical and hydrocarbon processing industries. A second application is flow measurement for slurries and high viscosity fluids in the chemical industry. Honeywell remote seal transmitters are available with secondary fill fluids for corrosive or high temperature process fluids

All ST 3000 transmitters can provide a 4-20 mA output, Honeywell Digitally Enhanced (DE) output, HART* output, or FOUNDATION™ Fieldbus output. When digitally integrated with Honeywell's Process Knowledge System™, EXPERION PKS™, ST 3000 instruments provide a more accurate process variable as well as advanced diagnostics.

Honeywell's cost-effective ST 3000 S900 transmitters lead the industry in reliability and stability:

- Stability = +/-0.01% per year
- Reliability = 470 years MTBF

Figure 1—Series 900 Remote Seal Pressure Transmitters feature proven piezoresistive sensor technology.

The devices provide comprehensive self-diagnostics to help users maintain high uptime, meet regulatory requirements, and attain high quality standards. S900 transmitters allow smart performance at analog prices. Accurate, reliable and stable, Series 900 transmitters offer greater turndown ratio than conventional transmitters.

"Honeywell transmitters operating in the digital mode using Honeywell's Digitally Enhanced (DE) protocol make diagnostics available right at the control system's human interface. Equally important, transmitter status information is continuously displayed to alert the operator immediately of a fault condition. Because the process variable (PV) status transmission precedes the PV value, we are guaranteed that a bad PV is not used in a control algorithm. In addition, bi-directional communication provides for remote transmitter configuration directly from the human interface, enabling management of the complete loop."

Maureen Atchison, DuPont
Site Electrical & Instrumentation Leader

Description

The ST 3000 transmitter can replace any 4 to 20 mA output transmitter in use today and operates over a standard two-wire system.

The measuring means is a piezoresistive sensor, which actually contains three sensors in one. It contains a differential pressure sensor, a temperature sensor, and a static pressure sensor.

Microprocessor-based electronics provide higher span-turndown ratio, improved temperature and pressure compensation, and improved accuracy.

The transmitter's meter body and electronics housing resist shock, vibration, corrosion, and moisture. The electronics housing contains a compartment for the single-board electronics, which is isolated from an integral junction box. The single-board electronics is replaceable and interchangeable with any other ST 3000 Series 100 or Series 900 model transmitter.

Like other Honeywell transmitters, the ST 3000 features two-way communication between the operator and the transmitter through our Smart Field Configurator (SFC). You can connect the SFC anywhere that you can access the transmitter signal lines.

The SCT 3000 Smartline® Configuration Toolkit provides an easy way to configure instruments using a personal computer. The toolkit enables configuration of devices before shipping or installation. The SCT 3000 can operate in the offline mode to configure an unlimited number of devices. The database can then be loaded downline during commissioning.

Features

- Choice of linear or square root output conformity is a simple configuration selection.
- Direct digital integration with Experion PKS and other control systems provides local measurement accuracy to the system level without adding typical A/D and D/A converter inaccuracies.
- Unique piezoresistive sensor automatically compensates input for temperature and static pressure.Added "smart" features include configuring lower and upper range values, simulating accurate analog output, and selecting preprogrammed engineering units for display.
- Smart transmitter capabilities with local or remote interfacing means significant manpower efficiency improvements in commissioning, start-up, and ongoing maintenance functions.

Specifications

Operating Conditions – All Models

Parameter	Reference Condition (at zero static)		Rated Condition		Operative Limits		Transportation and Storage	
	°C	°F	°C	°F	°C	°F	°C	°F
Ambient Temperature	25 ±1	77 ±2	-25 to 70	-13 to 158	-40 to 85	-40 to 185	-55 to 125	-67 to 257
Process Interface Temperature	25 ±1	77 ±2	See Figure 2				-55 to 125	-67 to 257
Humidity %RH	10 to 55		0 to 100		0 to 100		0 to 100	
Overpressure (Flange Rating) **psi** **bar**	0 0		750* 52*		750* 52*			
Vacuum Region, Minimum Pressure - mmHg absolute **inH_2O absolute**	atmospheric atmospheric		See Figure 2					
Supply Voltage, Current, and Load Resistance	**Voltage Range:** 10.8 to 42.4 Vdc at terminals **Current Range:** 3.0 to 21.8 mA **Load Resistance:** 0 to 1440 ohms (as shown in Figure 3)							

* Or Seal rating, whichever is lower. See Model Selection Guide for Seal rating.

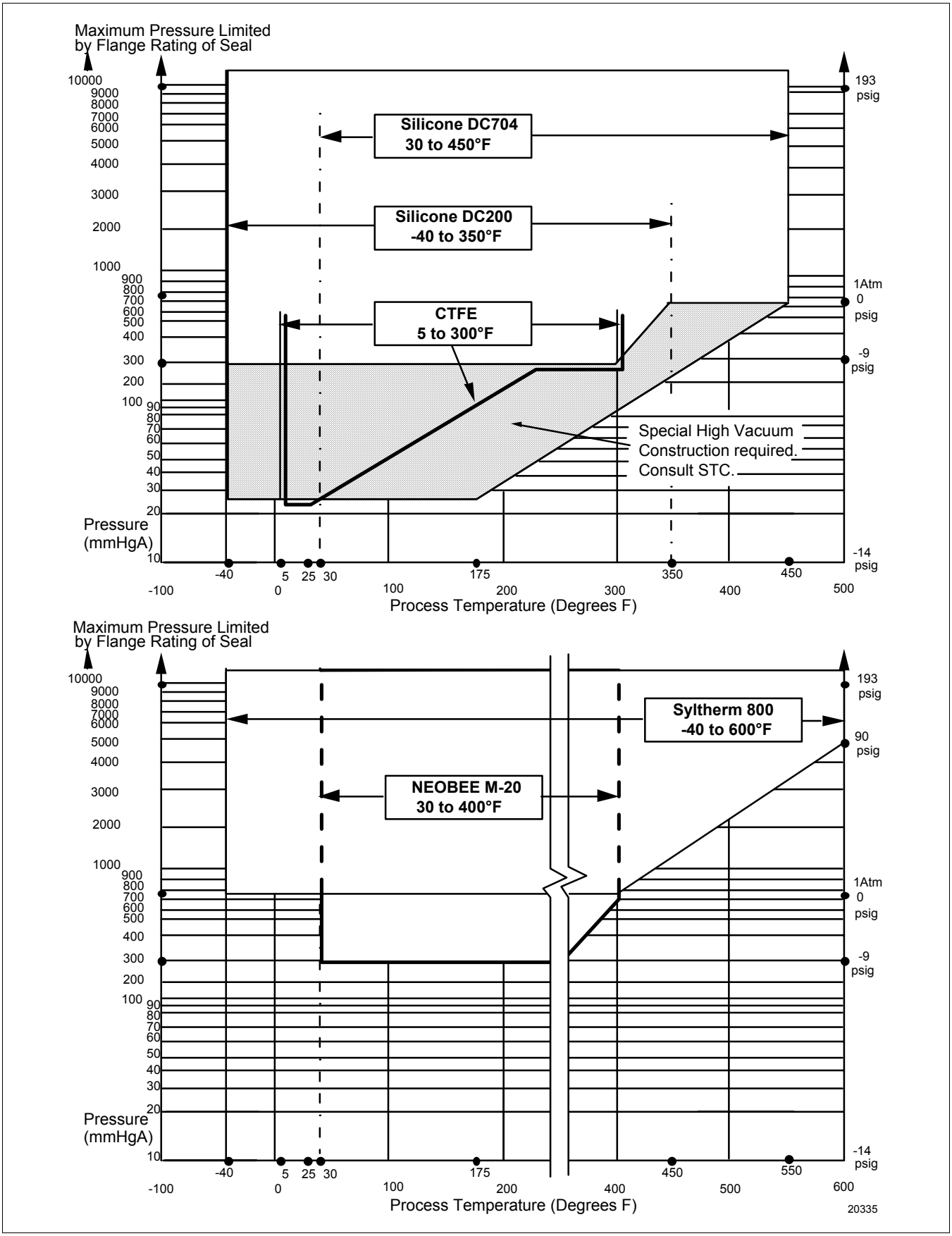


Figure 2—ST 3000 Remote Seals operable limits for pressure versus temperature

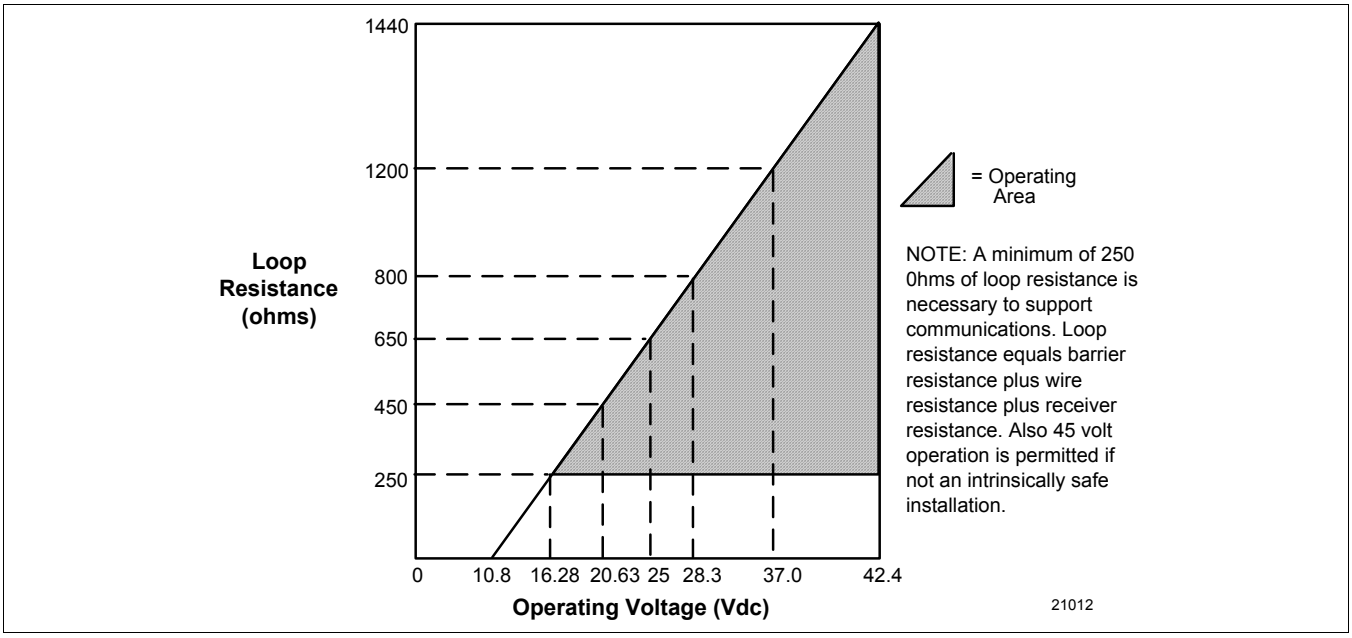


Figure 3—Supply voltage and loop resistance chart

Performance Under Rated Conditions * - Model STR93D (0 to 100 psi/7 bar)

Parameter	Description
Upper Range Limit **psi** **bar**	100 (Transmitter URL or maximum seal pressure rating, whichever is lower.) 7
Minimum Span **psi** **bar**	0.9 0.063
Turndown Ratio	110 to 1
Zero Elevation and Suppression	No limit except minimum span within ±100% URL.
Accuracy (Reference – Includes combined effects of linearity, hysteresis, and repeatability) • *Accuracy includes residual error after averaging successive readings.* • *For FOUNDATION Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications.*	**In Analog Mode:** ±0.20% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (50 inH_2O), accuracy equals: $\pm 0.10 + 0.10 \left(\frac{50\ inH_2O}{span\ inH_2O} \right)$ or $\pm 0.10 + 0.10 \left(\frac{125\ mbar}{span\ mbar} \right)$ in % span **In Digital Mode:** ±0.175% of calibrated span or upper range value (URV), whichever is greater, terminal based. For URV below reference point (50 inH_2O), accuracy equals: $\pm 0.075 + 0.10 \left(\frac{50\ inH_2O}{span\ inH_2O} \right)$ or $\pm 0.075 + 0.10 \left(\frac{125\ mbar}{span\ mbar} \right)$ in % span
Combined Zero and Span Temperature Effect per 28°C (50°F) ** • *Specification doubles for 2-inch Sanitary Seals or for model with only one remote seal*	**In Analog Mode:** ±1.5% of span. For URV below reference point (100 inH_2O), effect equals: $\pm 0.30 + 1.2 \left(\frac{100\ inH_2O}{span\ inH_2O} \right)$ or $\pm 0.30 + 1.2 \left(\frac{250\ mbar}{span\ mbar} \right)$ in % span **In Digital Mode:** ±1.475% of span. For URV below reference point (100 inH_2O), effect equals: $\pm 0.275 + 1.2 \left(\frac{100\ inH_2O}{span\ inH_2O} \right)$ or $\pm 0.275 + 1.2 \left(\frac{250\ mbar}{span\ mbar} \right)$ in % span

* Performance specifications are based on reference conditions of 25°C (77°F), zero (0) static pressure, 10 to 55% RH, and 316L Stainless Steel barrier diaphragm.

** Apply 1.5 times factor to capillary lengths greater than 10 feet.

Performance Under Rated Conditions * - Models STR94G (0 to 500 psi/35 bar)

Parameter	Description
Upper Range Limit **psi** **bar**	500 35
Minimum Span **psi** **bar**	20 1.4
Turndown Ratio	25 to 1
Zero Elevation and Suppression	No limit except minimum span from absolute 0 (zero) to +100% URL.
Accuracy (Reference – Includes combined effects of linearity, hysteresis, and repeatability) • *Accuracy includes residual error after averaging successive readings.* • *For FOUNDATION Fieldbus use Digital Mode specifications. For HART use Analog Mode specifications.*	**In Analog Mode:** ±0.10% of calibrated span or upper range value (URV), whichever is greater, terminal based. **In Digital Mode:** ±0.075% of calibrated span or upper range value (URV), whichever is greater, terminal based.
Combined Zero and Span Temperature Effect per 28°C (50°F) **	**In Analog Mode:** ±2.2% of span. For URV below reference point (50 psi), effect equals: $\pm 0.2 + 2.0 \left(\frac{50 \text{ psi}}{\text{span psi}}\right)$ or $\pm 0.2 + 2.0 \left(\frac{3.5 \text{ bar}}{\text{span bar}}\right)$ in % span **In Digital Mode:** ±2.175% of span For URV below reference point (50 psi), effect equals: $\pm 0.175 + 2.0 \left(\frac{50 \text{ psi}}{\text{span psi}}\right)$ or $\pm 0.175 + 2.0 \left(\frac{3.5 \text{ bar}}{\text{span bar}}\right)$ in % span

* Performance specifications are based on reference conditions of 25°C (77°F), zero (0) static pressure, 10 to 55% RH, and 316L Stainless Steel barrier diaphragm.

** Apply 1.5 times factor to capillary lengths greater than 10 feet.

Performance Under Rated Conditions - General for all Models

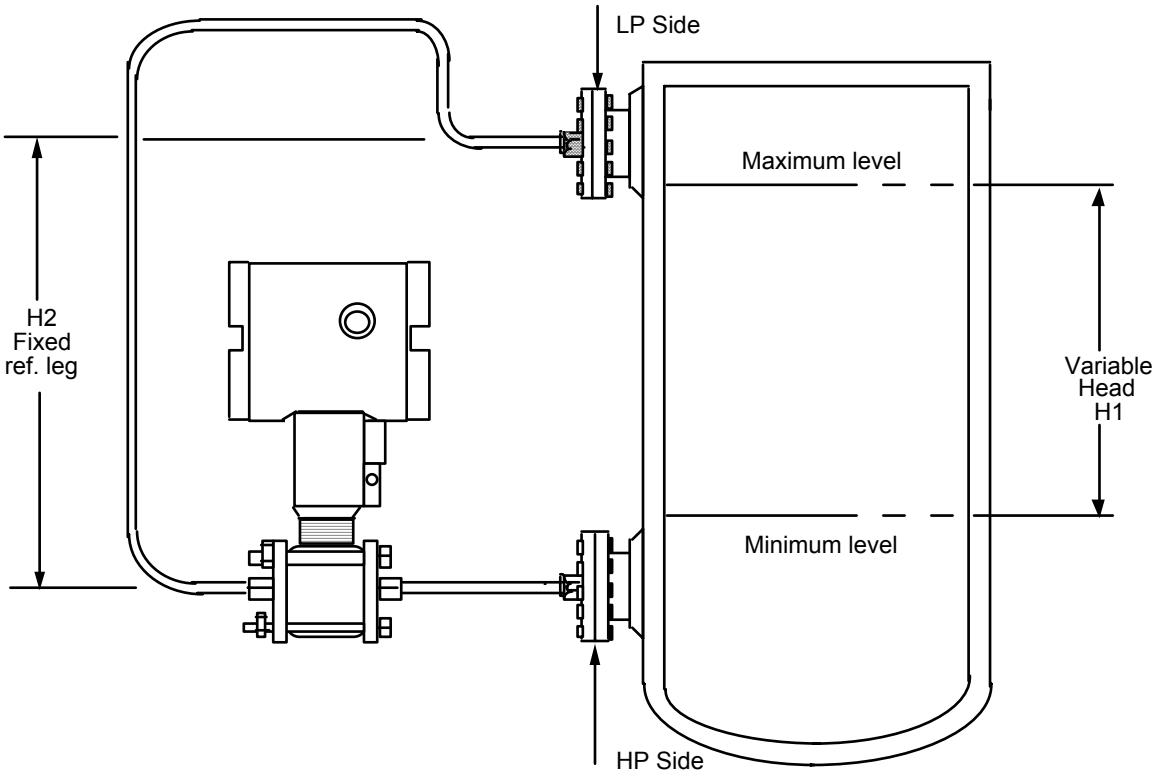
Parameter	Description
Output (two-wire)	Analog 4 to 20 mA or DE digital communications mode. Options available for FOUNDATION Fieldbus and HART protocols.
Supply Voltage Effect	0.005% span per volt.
Damping Time Constant	Adjustable from 0 to 32 seconds digital damping.
CE Conformity (Europe)	89/336/EEC, Electromagnetic Compatibility (EMC) Directive.

Physical and Approval Bodies

Parameter	Description
Process Interface	See Model Selection Guide for Material Options for desired Seal Type.
Seal Barrier Diaphragm	316L Stainless Steel, Monel, Hastelloy C, Tantalum
Seal Gasket Materials	Klinger C-4401 (non-asbestos) Grafoil
Mounting Bracket	Carbon Steel (zinc-plated) or Stainless Steel angle bracket or Carbon Steel flat bracket available.
Fill Fluid (Meter Body)	Silicone (DC 200) S.G. @ 25°C (77°F) = 0.94 CTFE (Chlorotrifluoroethylene) S.G. @ 25°C (77°F) = 1.89
Fill Fluid (Secondary)*	Silicone (DC 200) S.G. @ 25°C (77°F) = 0.94 CTFE (Chlorotrifluoroethylene) S.G. @ 25°C (77°F) = 1.89 Silicone (DC 704) S.G. @ 25°C (77°F) = 1.07 Syltherm 800 S.G. @ 25°C (77°F) = 0.90 NEOBEE M-20 S.G. @ 25°C (77°F) = 0.93
Electronics Housing	Epoxy-Polyester hybrid paint. Low-copper aluminum alloy. Meets NEMA 4X (watertight) and NEMA 7 (explosion proof)
Capillary Tubing**	Armored Stainless Steel or PVC Coated Armored Stainless Steel. Length: 5, 10, 15, 20, 25 and 35 feet (1.5, 3, 4.6, 6.1, 7.5 and 10.7m). A 2" (51 millimeter) S.S. close-coupled nipple is also available. See Model Selection Guide.
Wiring	Accepts up to 16 AWG (1.5 mm diameter)
Mounting	See Figure 4.
Dimensions	See Figures 7 and 8 for transmitter dimensions. See Model Selection Guide for Seal dimensions
Net Weight	Transmitter: 4.1 Kg (9 lbs). Total weight is dependent on seal type and capillary length.
Approval Bodies **- Hazardous Areas**	Approved as explosion proof and intrinsically safe for use in Class I, Division 1, Groups A, B, C, D locations, and nonincendive for Class I, Division 2, Groups A, B, C, D locations. Approved EEx ia IIC T4, T5, T6 and EEx d IIC T5, T6 per ATEX standards. See attached Model Selection Guide for options.
Pressure Equipment Directive (97/23/EC)	The ST 3000 pressure transmitters listed in this Specification have no pressurized internal volume or have a pressurized internal volume rated less than 1,000 bar (14,500 psig) and/or have a maximum volume of less than 0.1 liter. Therefore, these transmitters are either; not subject to the essential requirements of the directive 97/23/EC (PED, Annex 1) and shall not have the CE mark, or the manufacturer has the free choice of a module when the CE mark is required for pressures > 200 bar (2,900 psig).

* See Figure 2 for Fill Fluid temperature limits.
** 2-inch Sanitary Seals are limited to 15 ft. (4.6 m) capillary length.

NOTE: Pressure transmitters that are part of safety equipment for the protection of piping (systems) or vessel(s) from exceeding allowable pressure limits, (equipment with safety functions in accordance with Pressure Equipment Directive 97/23/EC article 1, 2.1.3), require separate examination.



NOTE: Lower flange seal should not be mounted over 22 feet below the transmitter for silicone fill fluid (11 feet for CTFE fill fluid) with tank at one atmosphere. The combination of tank vacuum and high pressure capillary head effect should not exceed 9 psi vacuum (300 mmHg absolute).

Consult Honeywell for installation of STR93D

Figure 4—Typical mounting arrangement for ST 3000 Transmitter with Remote Diaphragm Seals

Application Data

Liquid Level: Closed Tank
Determine the minimum and maximum pressure differentials to be measured (Figure 5).

$P_{Min} = (SG_p \times a) - (SG_f \times d)$
= LRV when HP at bottom of tank
= –URV when LP at bottom of tank

$P_{Max} = (SG_p \times b) - (SG_f \times d)$
= URV when HP at bottom of tank
= –LRV when LP at bottom of tank

Where:

minimum level = 4mA

maximum level = 20 mA

a = distance between bottom tap and minimum level

b = distance between bottom tap and maximum level

d = distance between taps

SG_f = Specific Gravity of capillary fill fluid (See Page 6 for values.)

SG_p = Specific Gravity of process fluid

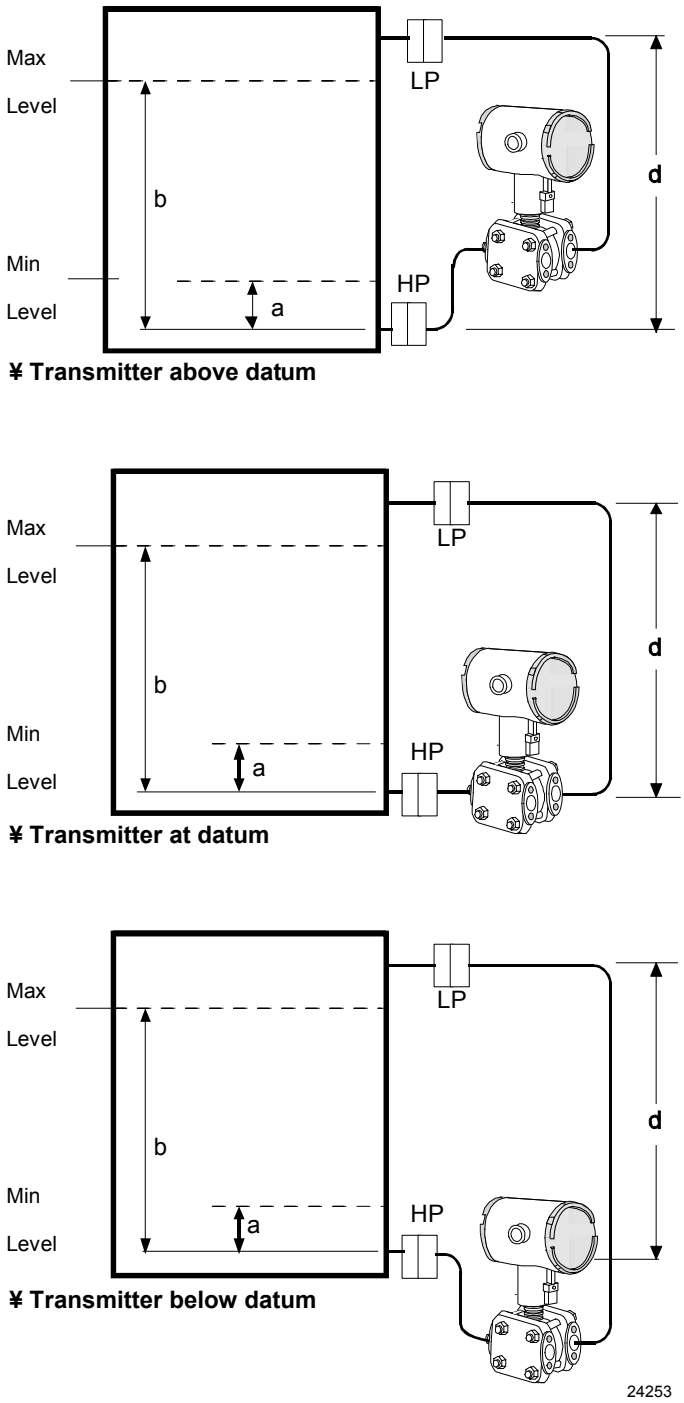


Figure 5—Closed tank liquid level measurement distances

Density or Interface
Calculate the minimum and maximum pressure differentials to be measured (Figure 6).

P_{min} = (SG_{min} – SG_f) x (d); minimum density, 4mA output

P_{max} = (SG_{max} – SG_f) x (d); maximum density, 20mA output

Where:

d = distance between the taps

SG_{max} = maximum Specific Gravity

SG_{min} = minimum Specific Gravity

SG_f = Specific Gravity of capillary fill fluid (See Page 6 for values.)

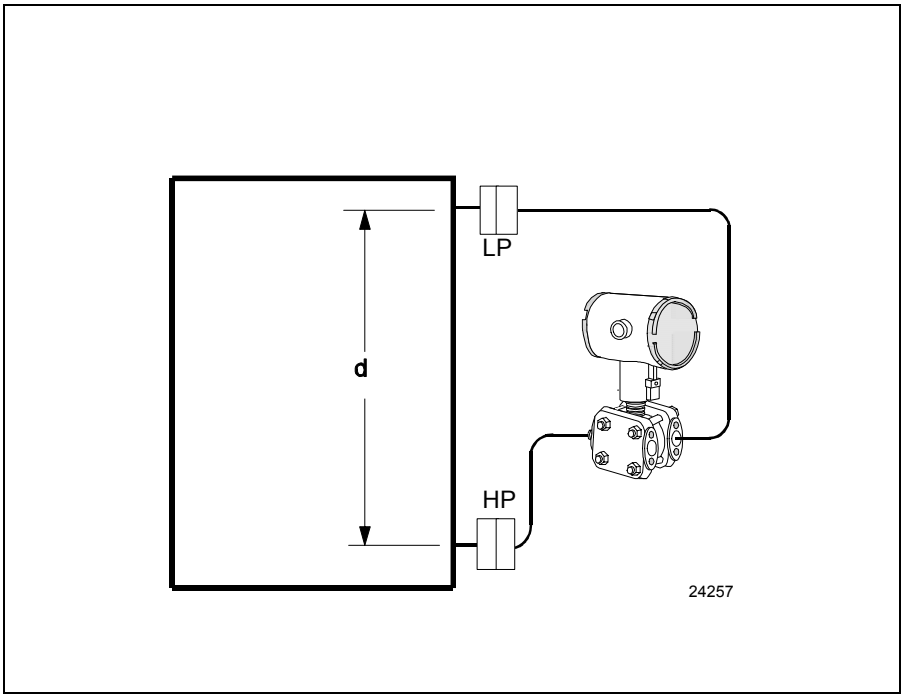
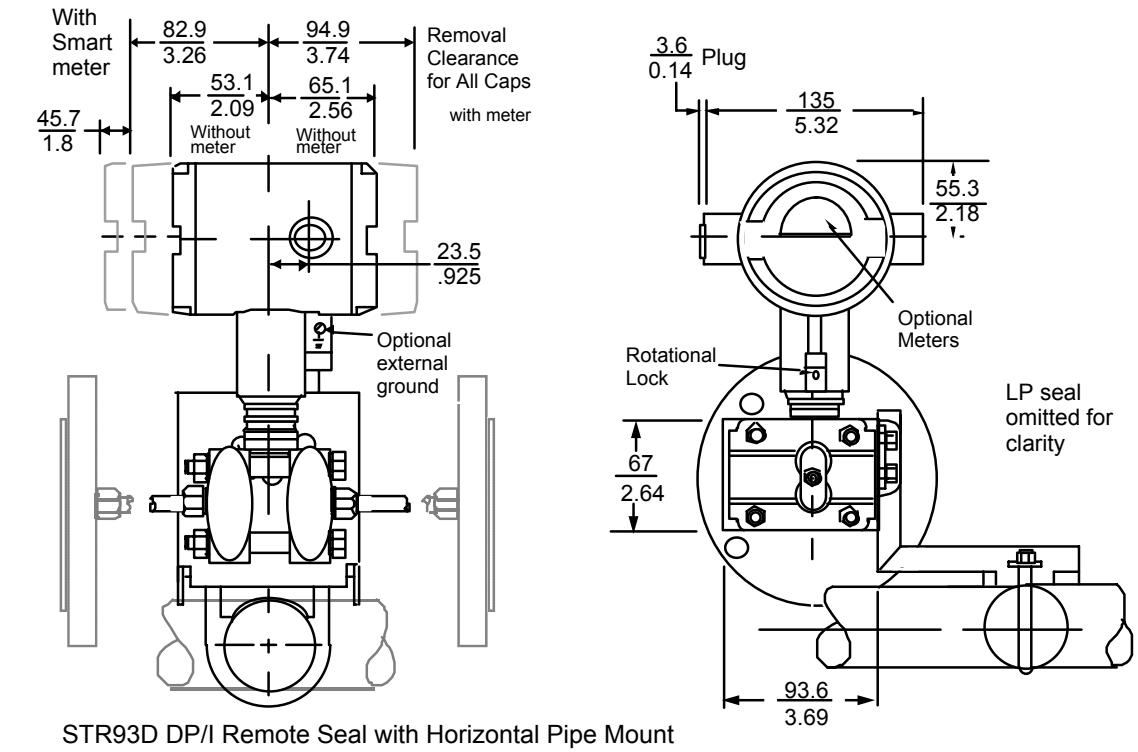
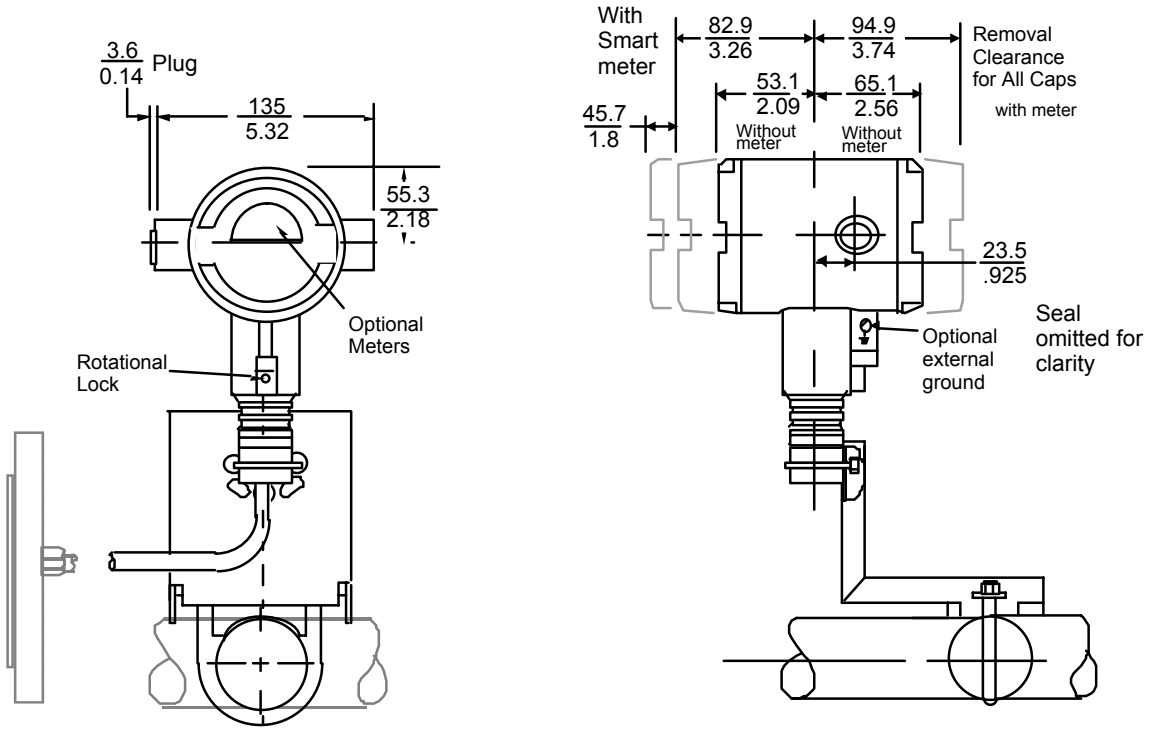


Figure 6—Density, direct acting transmitter configuration

Reference Dimensions: millimeters
Inches



STR93D DP/I Remote Seal with Horizontal Pipe Mount



STR94G LGP/I Remote Seal with Horizontal Pipe Mount

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Figure 7—Approximate horizontal mounting dimensions for Remote Seal Transmitter.

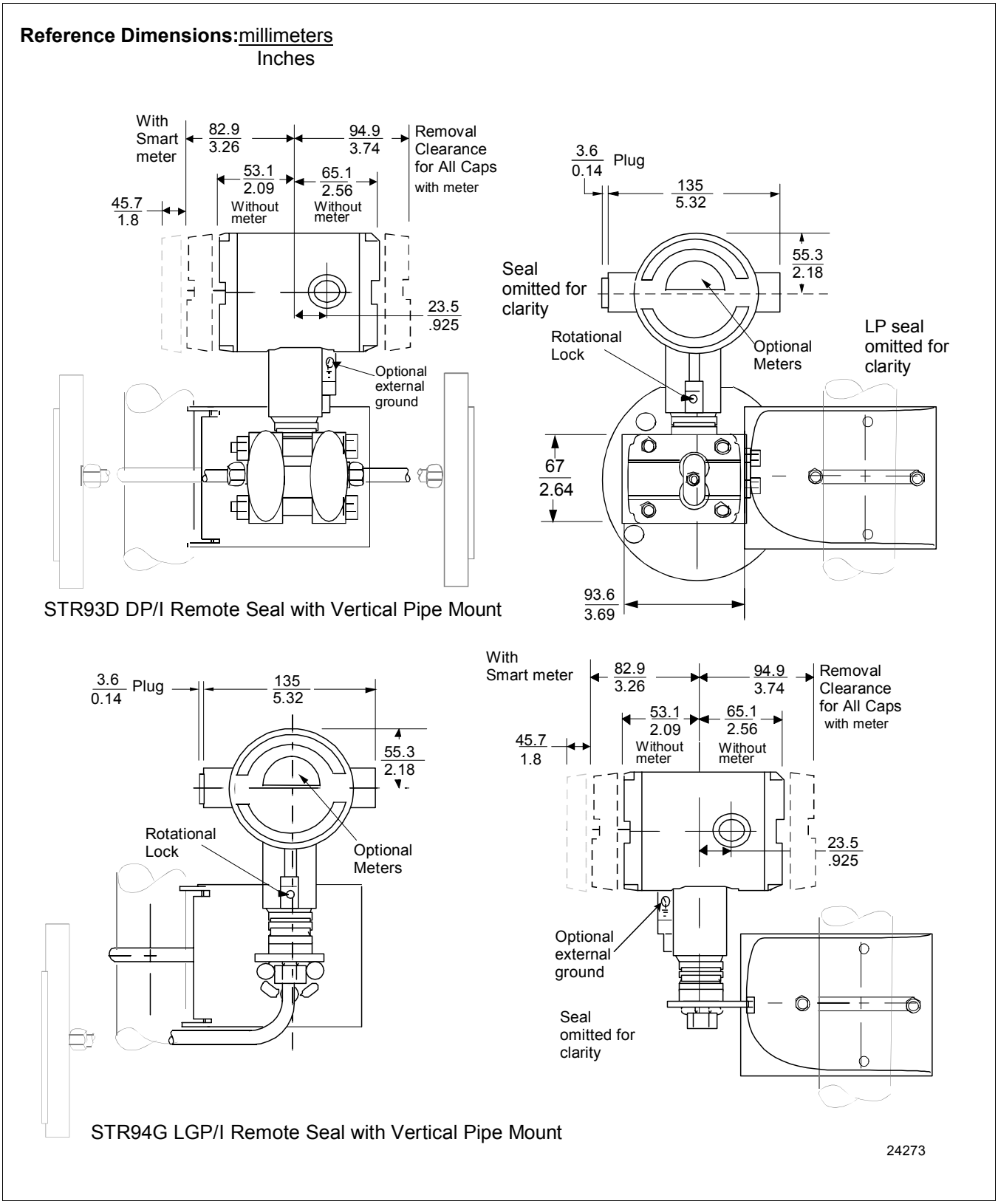

Figure 8—Approximate vertical mounting dimensions for Remote Seal Transmitter

Options

Mounting Bracket
The angle mounting bracket is available in either zinc-plated carbon steel or stainless steel and is suitable for horizontal or vertical mounting on a two inch (50 millimeter) pipe, as well as wall mounting. An optional flat mounting bracket is also available in carbon steel for two inch (50 millimeter) pipe mounting.

Indicating Meter (ME and SM Options)
Two integral meter options are available. An analog meter (option ME) is available with a 0 to 100% linear scale. The Smart Meter (option SM) provides an LCD display for both analog and digital output and can be configured to display pressure in pre-selected engineering units.

Lightning Protection (Option LP)
A terminal block with circuitry that protects the transmitter from transient surges induced by nearby lightning strikes is available.

HART Protocol Compatibility (Option HC)
An optional electronics module is available for the ST 3000 that provides HART Protocol compatibility. Transmitters with the HART Option are compatible with the AMS System. (Contact your AMS Supplier if an upgrade is required.)

Indicator Configuration (Option CI)
Provides custom configuration of Smart Meters.

Tagging (Option TG)
Up to 30 characters can be added on the stainless steel nameplate mounted on the transmitter's electronics housing at no extra cost. Note that a separate nameplate on the meter body contains the serial number and body-related data. A stainless steel wired on tag with additional data of up to 4 lines of 28 characters is also available. The number of characters for tagging includes spaces.

Transmitter Configuration (Option TC)
The factory can configure the transmitter linear/square root extraction, damping time, LRV, URV and mode (analog/digital) and enter an ID tag of up to eight characters and scratchpad information as specified.

Custom Calibration and ID in Memory (Option CC)
The factory can calibrate any range within the scope of the transmitter's range and enter an ID tag of up to eight characters in the transmitter's memory.

FOUNDATION Fieldbus (Option FF)
Equips transmitter with FF protocol for use in 31.25 kbit/s FF networks. See document 34-ST-03-72 for additional information on ST 3000 Fieldbus transmitters.

Specifications are subject to change without notice.
(Note that specifications may differ slightly for transmitters manufactured before October 30, 1995.)

Ordering Information

Contact your nearest Honeywell sales office, or

In the U.S.:
Honeywell
Industrial Automation & Control
16404 North Black Canyon Hwy.
Phoenix, AZ 85053
1-800-288-7491

In Canada:
The Honeywell Centre
155 Gordon Baker Rd.
North York, Ontario M2H 3N7
1-800-461-0013

In Latin America:
Honeywell Inc.
480 Sawgrass Corporate Parkway,
Suite 200
Sunrise, FL 33325
(954) 845-2600

In Europe and Africa:
Honeywell S. A.
Avenue du Bourget 1
1140 Brussels, Belgium

In Eastern Europe:
Honeywell Praha,
s.r.o. Budejovicka 1
140 21 Prague 4,
Czech Republic

In the Middle East:
Honeywell Middle East Ltd.
Khalifa Street,
Sheikh Faisal Building
Abu Dhabi, U. A. E.

In Asia:
Honeywell Asia Pacific Inc.
Honeywell Building,
17 Changi Business Park Central 1
Singapore 486073
Republic of Singapore

In the Pacific:
Honeywell Pty Ltd.
5 Thomas Holt Drive
North Ryde NSW Australia 2113
(61 2) 9353 7000

In Japan:
Honeywell K.K.
14-6 Shibaura 1-chrome
Minato-ku, Tokyo, Japan 105-0023

Or, visit Honeywell on the World Wide Web at: **http://www.honeywell.com**

Model Selection Guide (34-ST-16-34)

Instructions

- Select the desired Key Number. The arrow to the right marks the selection available.
- Make one selection from each table, I and II, using the column below the proper arrow.

Select as many Table III options as desired (if no options are desired, specify 00).
A dot denotes unrestricted availability. A letter denotes restricted availability.
Restrictions follow Table IV.

Key Number		I		II		III (Optional)		IV
_ _ _ _ _ _	-	_ _ _	-	_ _ _ _ _ _ _ _ _ _ _ _	-	_ _, _ _ _ _	+	XXXX

KEY NUMBER

Description	Selection	Availability	
0-25" to 0-2700" H_2O/0-62.2 to 0-7000 mbar	STR93D	↓	
Body Rating*: 750 psi (51.7 bar) Compound Characterized			
0-20 to 0-500 psig/0-1.4 to 0-35 bar	STR94G		↓
Body Rating*: 500 psi (35 bar)			

*** Remote seal system pressure rating is body rating or seal rating, whichever is less.**

TABLE I - METER BODY

Number of Seals	1 Remote Seal (High Side)	1 _ _	•	•
	2 Remote Seals	2 _ _	•	
	1 Remote Seal (Low Side)	3 _ _	•	
Fill Fluid (Meter Body)	Silicone (DC 200)	_ 1 _	•	•
	CTFE	_ 2 _	q	q
Construction	**Non-Wetted Adapter Head Material**			
Standard Dual Head	316 St. St.	_ _ A		•
	316 St. St. for Close-Couple	_ _ D		y
Standard Dual Head	316 St. St.	_ _ A	•	
	Carbon St. (zinc-plated)	_ _ B	•	
	316 St. St. for Close-Couple	_ _ D	y	

Model Selection Guide, cont.

TABLE II - SEALS					Selection	STR9_ _ 3D	4G
Format for Seal Selection: Specify 12 characters _ _ _ | _ _ _ _ _ _ _ _ _ Common Required Seal **Note:** The first 3 characters are common to all seals. When selecting required seal, you must specify only the 9 selections within the required seal.							
Secondary Fill	Silicone (DC 200)				1 _ _ _ _ _ _ _ _ _	•	•
	CTFE				2 _ _ _ _ _ _ _ _ _	•	•
	Silicone (DC 704)				3 _ _ _ _ _ _ _ _ _	p	p
	Neobee (M20) **				4 _ _ _ _ _ _ _ _ _	•	•
	Syltherm 800 ***				5 _ _ _ _ _ _ _ _ _	p	p
Connection of Remote Seal to Meter Body	Capillary Length	5 feet	1.5 m	SS Armor	_ A _ _ _ _ _ _ _ _	•	•
		10 feet	3.0 m		_ B _ _ _ _ _ _ _ _	•	•
		15 feet	4.5 m		_ C _ _ _ _ _ _ _ _	•	•
		20 feet	6.1 m		_ D _ _ _ _ _ _ _ _	•	•
		25 feet	7.5 m		_ E _ _ _ _ _ _ _ _	•	•
		35 feet	10.7 m		_ F _ _ _ _ _ _ _ _	•	•
		5 feet	1.5 m	PVC Coated SS Armor	_ G _ _ _ _ _ _ _ _	•	•
		10 feet	3.0 m		_ H _ _ _ _ _ _ _ _	•	•
		15 feet	4.5 m		_ J _ _ _ _ _ _ _ _	•	•
		20 feet	6.1 m		_ K _ _ _ _ _ _ _ _	•	•
		25 feet	7.5 m		_ L _ _ _ _ _ _ _ _	•	•
		35 feet	10.7 m		_ M _ _ _ _ _ _ _ _	•	•
	2 inch long SS nipple close-coupled				2	z	z
No Selection					_ _ 0 _ _ _ _ _ _ _	•	•
Flush Flanged Seal	**Diaphragm Diameter**	**Flange Size**	**Flange Pressure Rating ***				
	3.5"	3"	ANSI Class 150		_ _ _ AFA _ _ _ _ _ _	•	•
			ANSI Class 300		_ _ _ AFC _ _ _ _ _ _	•	•
			DIN DN80-PN40		_ _ _ AFM _ _ _ _ _ _	•	•
	Wetted Material		**Diaphragm**	**Upper Insert**			
			316L SS	316 St. St.	_ _ _ _ _ _ AA _ _ _ _	•	•
			Hastelloy C	316 St. St.	_ _ _ _ _ _ AB _ _ _ _	•	•
			Hastelloy C	Hastelloy C	_ _ _ _ _ _ AC _ _ _ _	•	•
			Monel	Monel	_ _ _ _ _ _ AE _ _ _ _	•	•
	Non-Wetted Material (upper)		CS with Polyester Powder Coating		_ _ _ _ _ _ _ 1 _ _ _	•	•
			316 St. St.		_ _ _ _ _ _ _ 2 _ _ _	•	•
	Bolts		No Selection		_ _ _ _ _ _ _ _ 0 _ _	•	•
	Styles		No Selection		_ _ _ _ _ _ _ _ _ 0 _	•	•
	Gasket		No Selection		_ _ _ _ _ _ _ _ _ _ 0	•	•

Table II continued next page

* Standard facing 125-250 AARH RF (raised face) serrated surface finish.

** Limited vacuum availability.

*** Minimum static pressure requirement. No vacuum allowed. See Specification Figure 2.

Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.

Model Selection Guide, cont.

TABLE II - SEALS (continued)

	Diaphragm Diameter	Flange Size	Flange Pressure Rating *	Const. - See Spec. Figure 34-ST-03-57	STR9_ _ Selection	3D	4G
Flush Flanged Seal with Lower	2.4"	1"	ANSI 150	2	_ _ _ BCA _ _ _ _ _ _	•	•
			ANSI 300	2	_ _ _ BCC _ _ _ _ _ _	•	•
		1-1/2"	ANSI 150	2	_ _ _ BGA _ _ _ _ _ _	•	•
			ANSI 300	2	_ _ _ BGC _ _ _ _ _ _	•	•
		2"	ANSI 150	2	_ _ _ BDA _ _ _ _ _ _	•	•
			ANSI 300	2	_ _ _ BDC _ _ _ _ _ _	•	•
		3"	ANSI 150	2	_ _ _ BFA _ _ _ _ _ _	•	•
			ANSI 300	2	_ _ _ BFC _ _ _ _ _ _	•	•
	2.9"	1/2"	ANSI 150	3	_ _ _ CAA _ _ _ _ _ _	•	•
		1"	ANSI 150	3	_ _ _ CCA _ _ _ _ _ _	•	•
			ANSI 300	3	_ _ _ CCC _ _ _ _ _ _	•	•
		1-1/2"	ANSI 150	2	_ _ _ CGA _ _ _ _ _ _	•	•
			ANSI 300	2	_ _ _ CGC _ _ _ _ _ _	•	•
		2"	ANSI 150	2	_ _ _ CDA _ _ _ _ _ _	•	•
			ANSI 300	2	_ _ _ CDC _ _ _ _ _ _	•	•
	4.1"	1/2"	ANSI 150	3	_ _ _ DAA _ _ _ _ _ _	•	•
		1"	ANSI 150	3	_ _ _ DCA _ _ _ _ _ _	•	•
			ANSI 300	3	_ _ _ DCC _ _ _ _ _ _	•	•
		1-1/2"	ANSI 150	3	_ _ _ DGA _ _ _ _ _ _	•	•
			ANSI 300	3	_ _ _ DGC _ _ _ _ _ _	•	•
		2"	ANSI 150	3	_ _ _ DDA _ _ _ _ _ _	•	•
			ANSI 300	2	_ _ _ DDC _ _ _ _ _ _	•	•
		3"	ANSI 150	2	_ _ _ DFA _ _ _ _ _ _	•	•
			ANSI 300	2	_ _ _ DFC _ _ _ _ _ _	•	•
	Wetted Material		**Diaphragm**	**Lower**			
			316L SS	316 St. St.	_ _ _ _ _ _ BA _ _ _ _	•	•
			Hastelloy C	316 St. St.	_ _ _ _ _ _ BB _ _ _ _	•	•
			Hastelloy C	Hastelloy C	_ _ _ _ _ _ BC _ _ _ _	•	•
			Monel	Monel	_ _ _ _ _ _ BE _ _ _ _	•	•
			Tantalum	316 St. St.	_ _ _ _ _ _ BF _ _ _ _	•	•
			Tantalum	Hastelloy C	_ _ _ _ _ _ BG _ _ _ _	•	•
	Non-Wetted Material (upper, upper insert)		**Upper**	**Upper Insert**			
			316 St. St.	316 St. St.	_ _ _ _ _ _ _ _ 4 _ _ _	•	•
			CS	316 St/ St.	_ _ _ _ _ _ _ _ 5 _ _ _	•	•
	Bolts		No Selection		_ _ _ _ _ _ _ _ 0 _ _	•	•
	Styles		Without 1/4" NPT Flushing Connection		_ _ _ _ _ _ _ _ _ _ 0 _	•	•
			With 1/4" NPT Flushing Connection		_ _ _ _ _ _ _ _ _ _ 7 _	•	•
	Gasket		Klinger C-4401 (non-asbestos)		_ _ _ _ _ _ _ _ _ _ K	c	c
			Grafoil		_ _ _ _ _ _ _ _ _ _ G	d	d

Table II continued next page

* Standard facing 125-250 AARH RF (raised face) serrated finish.

Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.

Model Selection Guide, cont.

STR9_ _

TABLE II - SEALS (continued)					Selection	3D	4G
Flange Seal with Extended Diaphragm	Diaphragm Diameter	Flange Size	Flange Pressure Rating *				
	2.9" (2.85")	3" (2.85" OD extension)	ANSI Class 150		_ _ _ EFA _ _ _ _ _ _	•	•
			ANSI Class 300		_ _ _ EFC _ _ _ _ _ _	•	•
			DIN DN80-PN40		_ _ _ EFM _ _ _ _ _ _	•	•
	3.5"	4" (3.70" OD extension)	ANSI Class 150		_ _ _ FGA _ _ _ _ _ _	•	•
			ANSI Class 300		_ _ _ FGC _ _ _ _ _ _	•	•
			DIN DN100-PN40		_ _ _ FGP _ _ _ _ _ _	•	•
	Wetted Material		Diaphragm	Lower			
			316L SS	316 St. St.	_ _ _ _ _ _ EA _ _ _ _	•	•
			Hastelloy C	316 St. St.	_ _ _ _ _ _ EB _ _ _ _	•	•
			Hastelloy C	Hastelloy C	_ _ _ _ _ _ EC _ _ _ _	•	•
	Non-Wetted Material (flange)		CS with Polyester Powder Coating		_ _ _ _ _ _ _ _ 7 _ _ _	•	•
	Bolts		No Selection		_ _ _ _ _ _ _ _ _ 0 _ _	•	•
	Extension Length		2"		_ _ _ _ _ _ _ _ _ _ 2 _	•	•
			4"		_ _ _ _ _ _ _ _ _ _ 4 _	•	•
			6"		_ _ _ _ _ _ _ _ _ _ 6 _	•	•
			No Selection		_ _ _ _ _ _ _ _ _ _ _ 0	•	•
Pancake Seal	Diaphragm Diameter	Flange Size	Flange Pressure Rating** Dependent on customer flange				
	3.5"	3"	ANSI Class 150/300/600		_ _ _ GFA _ _ _ _ _ _	•	•
	Wetted Material		Diaphragm	Body			
			316L SS	316 St. St.	_ _ _ _ _ _ GA _ _ _ _	•	•
			Hastelloy C	316 St. St.	_ _ _ _ _ _ GB _ _ _ _	•	•
			Hastelloy C	Hastelloy C	_ _ _ _ _ _ GC _ _ _ _	•	•
			Monel	Monel	_ _ _ _ _ _ GE _ _ _ _	•	•
	Non-Wetted Material		No Selection		_ _ _ _ _ _ _ _ 0 _ _ _	•	•
	Bolts		No Selection		_ _ _ _ _ _ _ _ _ 0 _ _	•	•
	Styles		No Selection		_ _ _ _ _ _ _ _ _ _ 0 _	•	•
			No Selection		_ _ _ _ _ _ _ _ _ _ _ 0	•	•

Table II continued next page

* Standard facing 125-250 AARH RF (raised face) serrated finish.

** Caution: Maximum working pressure of STR93D transmitter is 750 psi and STR94G transmitter is 500 psig. Damage to sensor may result if pressure limit is exceeded.

Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.

Model Selection Guide, cont.

TABLE II - SEALS (continued)

					Selection	STR9_ _ 3D	4G
Chemical Tee "Taylor" Wedge	Diaphragm Diameter	Flange Size	Flange Pressure Rating				
	3.5"	Taylor Wedge 5" O.D.	750 psi		_ _ _ HM0 _ _ _ _ _ _	v	
			Diaphragm	Lower			
	Wetted Material		316L SS	316 St. St.	_ _ _ _ _ _ HA _ _ _ _	•	
			Hastelloy C	316 St. St.	_ _ _ _ _ _ HB _ _ _ _	•	
	Non-Wetted Material		No Selection		_ _ _ _ _ _ _ _ 0 _ _ _	•	
	Bolts		No Selection		_ _ _ _ _ _ _ _ _ 0 _ _	•	
	Styles		No Selection		_ _ _ _ _ _ _ _ _ _ 0 _	•	
			No Selection		_ _ _ _ _ _ _ _ _ _ _ 0	•	
Seal with Threaded Process Connection	Diaphragm Diameter	Threaded Process Connection Size (NPT Female)	Seal Pressure Rating * CS Bolts	304 SS Bolts			
	2.4"	1/2" NPT	2500	1250	_ _ _ JJG _ _ _ _ _ _	•	•
		3/4" NPT			_ _ _ JKG _ _ _ _ _ _	•	•
		1" NPT			_ _ _ JLG _ _ _ _ _ _	•	•
	2.9"	1/2" NPT	2500 psi	1250 psi	_ _ _ KJG _ _ _ _ _ _	•	•
		3/4" NPT			_ _ _ KKG _ _ _ _ _ _	•	•
		1" NPT			_ _ _ KLG _ _ _ _ _ _	•	•
	4.1"	1/2" NPT	1500 psi	750 psi	_ _ _ LJG _ _ _ _ _ _	•	•
		3/4" NPT			_ _ _ LKG _ _ _ _ _ _	•	•
		1" NPT			_ _ _ LLG _ _ _ _ _ _	•	•
			Diaphragm	Lower			
	Wetted Material		316L SS	CS	_ _ _ _ _ _ JA _ _ _ _	•	•
			316L SS	316 St. St.	_ _ _ _ _ _ JB _ _ _ _	•	•
			Hastelloy C	316 St. St.	_ _ _ _ _ _ JC _ _ _ _	•	•
			Hastelloy C	Hastelloy C	_ _ _ _ _ _ JD _ _ _ _	•	•
			Monel	Monel	_ _ _ _ _ _ JE _ _ _ _	•	•
			Tantalum	316 St. St.	_ _ _ _ _ _ JF _ _ _ _	•	•
			Tantalum	Hastelloy C.	_ _ _ _ _ _ JG _ _ _ _	•	•
	Non-Wetted Material (upper)		CS with Polyester Powder Coating		_ _ _ _ _ _ _ _ A _ _ _	•	•
			Stainless Steel		_ _ _ _ _ _ _ _ C _ _ _	w	w
	Bolts		C.S.		_ _ _ _ _ _ _ _ _ C _ _	•	•
			304 St. St.		_ _ _ _ _ _ _ _ _ D _ _	•	•
	Styles		W/O Flushing Connection		_ _ _ _ _ _ _ _ _ _ A _	•	•
			With Flushing Connection		_ _ _ _ _ _ _ _ _ _ F _	•	•
	Gasket		Klinger C-4401 (non-asbestos)		_ _ _ _ _ _ _ _ _ _ _ K	c	c
			Grafoil		_ _ _ _ _ _ _ _ _ _ _ G	d	d

Table II continued next page

* Caution: Maximum working pressure of STR93D transmitter is 750 psi and STR94G transmitter is 500 psig. Damage to sensor may result if pressure limit is exceeded.

Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.

Model Selection Guide, cont.

TABLE II - SEALS (continued)

					STR9_ _ Selection	3D	4G
Sanitary Seal	**Diaphragm Diameter**	**Flange Size**	**Pressure Rating**				
	1.9"	2"	Customer clamp rating		_ _ _ MD0 _ _ _ _ _ _	g	•
	2.4"	2-1/2"	or 600 psi, whichever		_ _ _ NE0 _ _ _ _ _ _	•	•
	2.9"	3"	is less		_ _ _ PF0 _ _ _ _ _ _	•	•
	4.1"	4"			_ _ _ QG0 _ _ _ _ _ _	•	•
			Diaphragm	**Body**			
	Wetted Material		316L SS	316 St. St.	_ _ _ _ _ _ N A _ _ _ _	•	•
	Non-Wetted Material		No Selection		_ _ _ _ _ _ _ _ 0 _ _ _	•	•
	Bolts		No Selection		_ _ _ _ _ _ _ _ _ 0 _ _	•	•
	Styles		Tri-Clover Tri-Clamp		_ _ _ _ _ _ _ _ _ _ 8 _	•	•
	Gasket		No Selection		_ _ _ _ _ _ _ _ _ _ _ 0	•	•
Saddle Seal	**Diaphragm Diameter**	**Size and Bolt Pattern**	**Seal Pressure Rating * *** **C.S. Bolts**	**304 St. St. Bolts**			
	2.4"	for 3" pipe-Conoflow or 4" or larger pipe-Conoflow	1250 psi	1250 psi	_ _ _ RPK _ _ _ _ _ _	•	•
					_ _ _ RQK _ _ _ _ _ _	•	•
			Diaphragm	**Lower Housing**			
	Wetted Material		316L SS	C. S.	_ _ _ _ _ _ RA _ _ _ _	•	•
			316L SS	316 St. St.	_ _ _ _ _ _ RB _ _ _ _	•	•
			Hastelloy C	316 St. St.	_ _ _ _ _ _ RC _ _ _ _	•	•
			316 LSS	N/A-Body Only	_ _ _ _ _ _ SB _ _ _ _	•	•
			Hastelloy C	N/A-Body Only	_ _ _ _ _ _ SC _ _ _ _	•	•
	Non-Wetted Material		**Body**	**Bolts ***			
			C. S.	C. S.	_ _ _ _ _ _ _ _ B _ _ _	•	•
			316 St. St.	304 St. St.	_ _ _ _ _ _ _ _ C _ _ _	•	•
	No Selection				_ _ _ _ _ _ _ _ _ 0 _ _	•	•
	Styles		No Selection		_ _ _ _ _ _ _ _ _ _ 0 _	•	•
	Gasket		No Selection		_ _ _ _ _ _ _ _ _ _ _ 0	•	•

* Bolts are not included with "Body only" selection.

** Caution: Maximum working pressure of STR93D transmitter is 750 psi and STR94G transmitter is 500 psig. Damage to sensor may result if pressure limit is exceeded.

Note: Remote seal system pressure rating is body rating or seal rating, whichever is less.
All sanitary seals have dairy grade 3A approval.

Model Selection Guide, cont.

TABLE III - OPTIONS	Selection	STR9_ _ 3D	4G	
None	00	◆	◆	
HART® Protocol Compatible Electronics	HC	e	e	b
FOUNDATION Fieldbus Communications	FF	r	r	
Analog Meter (0-100 Even 0-10 Square Root)	ME	◆	◆	b
Smart Meter	SM	◆	◆	
Custom Configuration of Smart Meter	CI	m	m	
Local Zero	LZ	x	x	
Local Zero and Span	ZS	s	s	
Lightning Protection	LP	◆	◆	
Custom Calibration and I.D. in Memory	CC	◆	◆	
Transmitter Configuration	TC	◆	◆	
Write Protection	WP	◆	◆	
A286SS (NACE) Bolts and 302/304SS (NACE) Nuts for Heads	CR	◆		
Stainless Steel Customer Wired-On Tag (4 lines, 28 characters per line, customer supplied information)	TG	◆	◆	
Stainless Steel Customer Wired-On Tag (blank)	TB	◆	◆	
Mounting Bracket - Carbon Steel	MB	◆	◆	
Mounting Bracket - ST. ST.	SB	◆	◆	b
Flat Mounting Bracket	FB	◆	◆	
316 ST.ST. Electronics Housing - *with M20 Conduit Connections*	SH	n	n	
1/2" NPT to M20 316SS Conduit Adapter (BASEEFA EEx d IIC)	A1	n	n	b
1/2" NPT to 3/4" NPT 316 SS Conduit Adapter	A2	u	u	
Stainless Steel Housing with M20 to 1/2" NPT 316 SS Conduit Adapter *(use for FM and CSA Approvals)*	A3	i	i	
Clean Transmitter for Oxygen or Chlorine Service with Certificate	0X	h	h	
Over-Pressure Leak Test with F3392 Certificate	TP	◆	◆	
Calibration Test Report and Certificate of Conformance (F3399)	F1	◆	◆	b
Certificate of Conformance (F3391)	F3	◆	◆	
Certificate of Origin (F0195)	F5	◆	◆	
FMEDA (SIL) Certificate	F6	◆	◆	
NACE Certificate (F0198)	F7	o	◆	
Additional Warranty - 1 year	W1	◆	◆	
Additional Warranty - 2 years	W2	◆	◆	b
Additional Warranty - 3 years	W3	◆	◆	
Additional Warranty - 4 years	W4	◆	◆	

Table III continued next page

Model Selection Guide, cont.

TABLE III - OPTIONS (continued)

Approval Body	Approval Type	Location or Classification	Selection	STR9_ _ 3D	4G
No hazardous location approvals			9X	◆	◆
Factory Mutual	Explosion Proof	Class I, Div. 1, Groups A,B,C,D	1C	◆	◆
	Dust Ignition Proof	Class II, III Div. 1, Groups E,F,G			
	Non-Incendive	Class I, Div. 2, Groups A,B,C,D			
	Intrinsically Safe	Class I, II, III, Div. 1, Groups A,B,C,D,E,F,G			
CSA	Explosion Proof	Class I, Div. 1, Groups B,C,D	2J	◆	◆
	Dust Ignition Proof	Class II, III, Div. 1, Groups E,F,G			
	Intrinsically Safe	Class I, II, III, Div. 1, Groups A,B,C,D,E,F,G			
SA (Australia)	Intrinsically Safe	Ex ia IIC T4	4G	◆	◆
	Non-Sparking	Ex n IIC T6 (T4 with SM option)			
ATEX*	Intrinsically Saft, Zone 0/1	⟨Ex⟩ II 1 G EEx ia IIC T4, T5,T6	3S	◆	◆
	Flameproof, Zone 1	⟨Ex⟩ II 2 G EEx d IIC T5, T6, Enclosure IP 66/67	3D	◆	◆
	Non-Sparking, Zone 2	⟨Ex⟩ II 3 G EEx nA, IIC T6 (Honeywell). Enclosure IP 66/67	3N	◆	◆

b

*See ATEX installation requirements in the ST 3000 User's Manual

97/23/EC Pressure Equipment Directive (PED)

The ST 3000 pressure transmitters listed in this Model Selection Guide are in conformity with the essential requirements of the PED. A formal statement from TÜV Industry Service Group of TÜV America, Inc., a division of TÜV Süddeutschland, a Notified Body regarding the Pressure Equipment Directive, is available upon request

TABLE IV

Factory Identification	XXXX	◆	◆

Model Selection Guide, cont.

RESTRICTIONS

Restriction		Available Only With		Not Available With
Letter	**Table**	**Selection**	**Table**	**Selection**
a	Approval Body pending			
b	Select only one option from this group			
c			II	_ _ _ _ _ _ BF _ _ _ _, _ _ _ _ _ _ BG _ _ _ _, _ _ _ _ _ _ JF _ _ _ _, _ _ _ _ _ _ JG _ _ _ _,
d	II	_ _ _ _ _ _ BF _ _ _ _, _ _ _ _ _ _ BG _ _ _ _, _ _ _ _ _ _ JF _ _ _ _, _ _ _ _ _ _ JG _ _ _ _,		
e			III	4G
h	I, II	_ 2 _ - 2 _ _ _ _ _ _ _ _ _ _ _		
i	III	1C or 2J		
m	III	SM		
n			III	1C, 2J
o	III	CR		
p			II	DC704 and Syltherm 800 fills and close-couple require SS seal upper. _ _ _ BCA _ _ 5 _ _ _, _ _ _ CAA _ _ 5 _ _ _, _ _ _ CCA _ _ 5 _ _ _, _ _ _ CCC _ _ 5 _ _ _, _ _ _ DAA _ _ 5 _ _ _, _ _ _ DCA _ _ 5 _ _ _, _ _ _ DCC _ _ 5 _ _ _, _ _ _ DGA _ _ 5 _ _ _, _ _ _ DGC _ _ 5 _ _ _, _ _ _ DDA _ _ 5 _ _ _, _ _ _ _ _ _ GE _ _ _ _, _ _ _ _ _ _ _ _ A _ _ _ _ _ _ _ _ _ _ _ B _ _ _
q	II	2 _ _ _ _ _ _ _ _ _ _ _ _, 4 _ _ _ _ _ _ _ _ _ _ _ _		
r			III	TC, ME, 4G, 3S
s			III	FF, ME
g	II	_ A _ _ _ _ _ _ _ _ _ _, _ B _ _ _ _ _ _ _ _ _ _, _ C _ _ _ _ _ _ _ _ _ _, _ G _ _ _ _ _ _ _ _ _ _, _ H _ _ _ _ _ _ _ _ _ _, _ J _ _ _ _ _ _ _ _ _ _, _ 2 _ _ _ _ _ _ _ _ _ _,		

Model Selection Guide, cont.

RESTRICTIONS - (continued)

Restriction Letter	Table	Available Only With Selection	Table	Not Available With Selection
u	III	1C, 2J		
v	I	2		
w			II	JA
x	III	FF, SM		
y	I II	1 _ _, 3 _ _ _ 2 _ _ _ _ _ _ _ _ _ _	III	MB, SB, FB DC704 and Sylthern 800 fills and close-couple require SS seal upper. _ _ _ BCA _ _ 5 _ _ _, _ _ _ CAA _ _ 5 _ _ _, _ _ _ CCA _ _ 5 _ _ _, _ _ _ CCC _ _ 5 _ _ _, _ _ _ DAA _ _ 5 _ _ _, _ _ _ DCA _ _ 5 _ _ _, _ _ _ DCC _ _ 5 _ _ _, _ _ _ DGA _ _ 5 _ _ _, _ _ _ DGC _ _ 5 _ _ _, _ _ _ DDA _ _ 5 _ _ _, _ _ _ _ _ _ GE _ _ _ _, _ _ _ _ _ _ _ _ A _ _ _ B
z	I	D		

Note: See 13:ST-27 for Published Specials with pricing.
See 13:ST-29 and User's Manual for part numbers.
See 13:ST-OE-9 for OMS Order Entry Information including TC, manuals, certificates, drawings and SPINS.
See 13:ST-OD-1 for tagging, ID, Transmitter Configuration (TC) and calibration including factory default values.
To request a quotation for a non-published "special", fax RFQ with Application Data Sheet (34-ST-18-01) to Marketing Applications.

Model Selection Guide, cont.

Type	Size	Non-wetted Material	Wetted Materials		Construction See Figure	Dimension 3.5" Diaphragm Dia. (in.)	
			Diaphragm	Upper Insert		A	B
Flush Flanged Seal	3" 150	CS	316 LSS Hast C Hast C Monel Monel	SS SS Hast C SS Monel	8a	7.50	1.10
		SS	316 LSS Hast C Monel	N/A	8b 8a 8b		0.94 1.10 0.94
	3" 300	CS	316 LSS Hast C Hast C Monel Monel	SS SS Hast C SS Monel	8a	8.25	1.31
		SS	316 LSS Hast C Monel	N/A	8b 8a 8b		1.12 1.31 1.12
	DIN DN80-PN40	CS	316 LSS Hast C Hast C Monel Monel	SS SS Hast C SS Monel	8a	7.87	1.07
		SS	316 LSS Hast C Monel	N/A	8b 8a 8b		0.94 1.07 0.94

Model Selection Guide, cont.

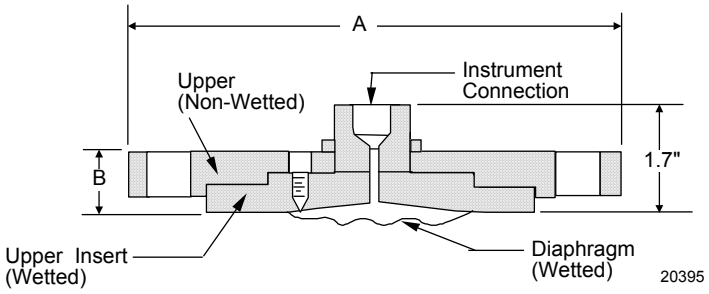

Figure 8a. Flush Flanged Seal

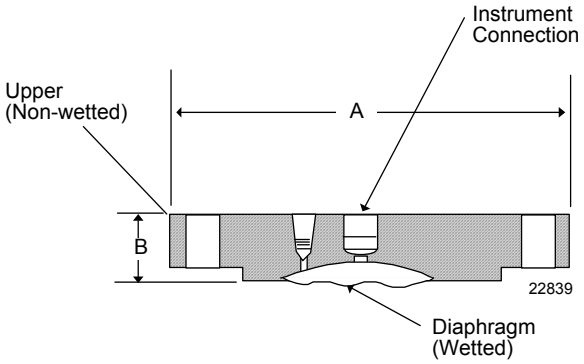

Figure 8b. Flush Flanged Seal

Model Selection Guide, cont.

Type	Size		Dim.	2.4" Diaph. Dia. (in.)	2.9" Diaph. Dia. (in.)	4.1" Diaph. Dia. (in.)
Flush Flanged Seal with Lower	150	1/2"	A	□3.50	□4.00	□5.30
			B	□2.00	□2.00	□2.10
			C	—	—	—
		1"	A	■ 4.00	□4.00	□5.30
			B	■ 1.70	□2.10	□2.10
			C	■ 1.10	—	—
		1-1/2"	A	■ 5.00	■ 5.00	□5.30
			B	■ 1.80	■ 1.90	□2.10
			C	■ 1.20	■ 1.30	—
		2"	A	■ 6.00	■ 6.00	□5.80
			B	■ 1.90	■ 1.90	□2.00
			C	■ 1.40	■ 1.40	—
		3"	A	■ 7.50	■ 7.50	■ 7.50
			B	■ 2.30	■ 2.30	■ 2.00
			C	■ 1.90	■ 1.90	■ 1.60
	300	1"	A	■ 4.90	□4.50	□5.30
			B	■ 1.90	□2.10	□2.10
			C	■ 1.30	—	—
		1-1/2"	A	■ 6.10	■ 6.10	□5.80
			B	■ 1.80	■ 1.90	□2.30
			C	■ 1.20	■ 1.40	—
		2"	A	■ 6.50	■ 6.50	■ 6.50
			B	■ 1.90	■ 1.90	■ 2.30
			C	■ 1.50	■ 1.50	■ 1.90
		3"	A	■ 8.30	■ 8.30	■ 8.30
			B	■ 2.70	■ 2.70	■ 2.30
			C	■ 2.10	■ 2.10	■ 2.10

Dimensions without flushing connection.

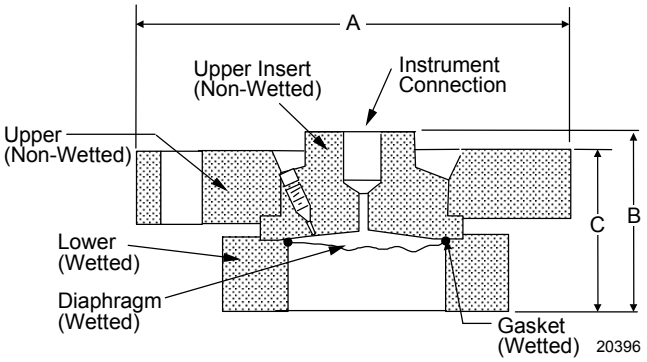

Figure 9. Flush Flanged Seal with Lower (■)

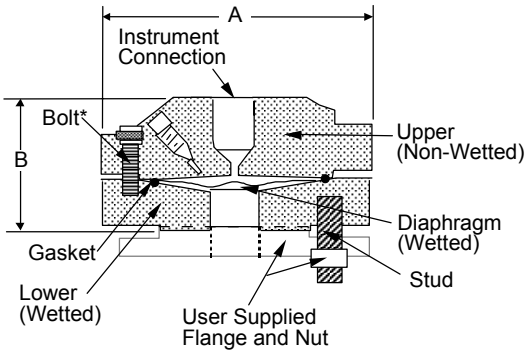

Figure 10. Flush Flanged Seal with Lower (□)

Type	Size	Dim.	2.9" Diaph. Dia. (in.)	3.5" Diaph. Dia. (in.)
Flanged Seal with Extended Diaphragm	3" 150	A	7.50	—
		B	0.94	—
		C*	2.85	
	3" 300	A	8.25	—
		B	1.12	—
		C*	2.85	
	DIN DN80-PN40	A	7.87	—
		B	0.94	—
		C*	2.85	
	4" 150	A	—	9.00
		B	—	0.94
		C*		3.70
	4" 300	A	—	10.00
		B	—	1.25
		C*		3.70
	DIN DN100-PN40	A	—	9.25
		B	—	0.94
		C*		3.70

* Designed to mate with Sch 40 pipe

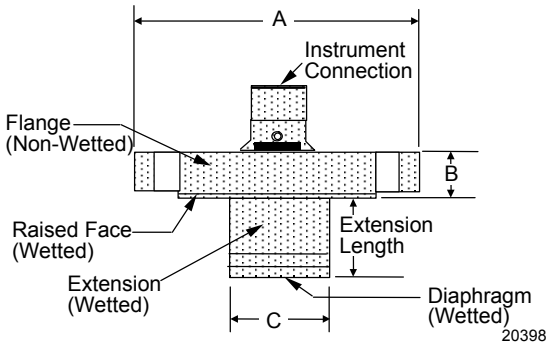

Figure 11. Flanged Seal with Extended Diaphragm

Model Selection Guide, cont.

Type	Size	Dimension	3.5" Diaph. Dia. (in.)
Pancake Seal	3" 150/300/ 600	A B	5.00 0.90

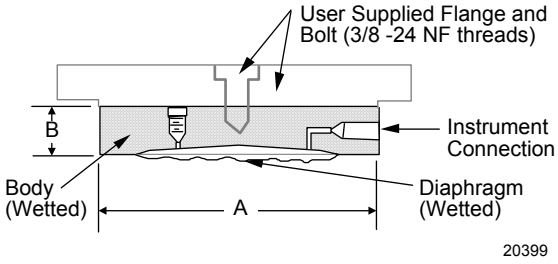

Figure 12 Pancake Seal

Type	Size	Dimension	3.5" Diaph. Dia. (in.)
Chemical Tee "Taylor Wedge" Seal	750 psi	A B	5.00 0.50

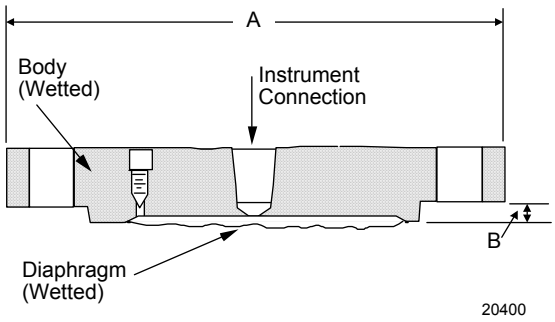

Figure 13. Chemical Tee "Taylor Wedge"

Type	Size (NPT)	Dim.	2.4" Diaph. Dia. (in.)	2.9" Diaph. Dia. (in.)	4.1" Diaph. Dia. (in.)
Seal with Threaded Process Connection	1/4" or 1/2"	A B	3.50 1.80	4.00 1.80	5.30 1.80
	3/4" or 1"	A B	3.50 2.10	4.00 2.10	5.30 2.10

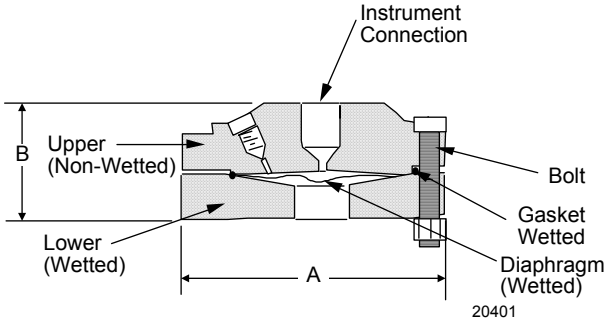

Figure 14. Seal with Threaded Process Connection

Model Selection Guide, cont.

Type	Size	Dim.	1.9" Diaph. Dia. (in.)	2.4" Diaph. Dia. (in.)	2.9" Diaph. Dia. (in.)	4.1" Diaph. Dia. (in.)
Sanitary Seal	2"	A B	2.50 1.20	— —	— —	— —
	2-1/2"	A B	— —	3.00 1.20	— —	— —
	3"	A B	— —	— —	3.60 1.20	— —
	4"	A B	— —	— —	— —	4.70 1.00

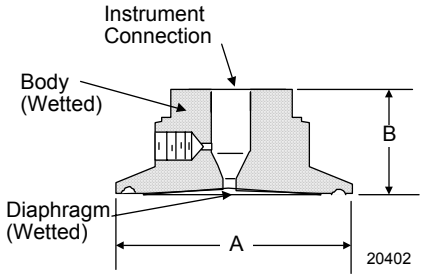

Figure 15. Sanitary Seal

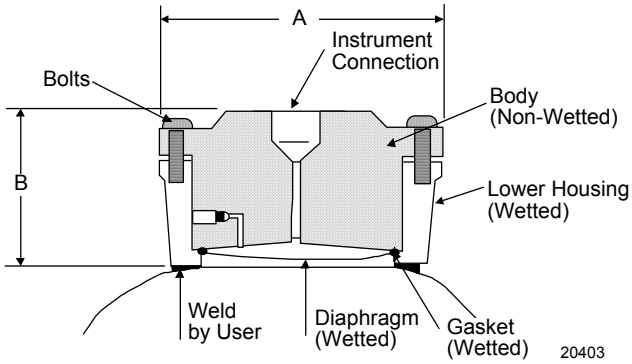

Figure 16. 3" Saddle Seal

Type	Size	Dimension	2.4" Diaph. Dia. (in.)
Saddle Seal	3"	A B	3.50 2.30
	4" or larger	A B	3.50 2.40

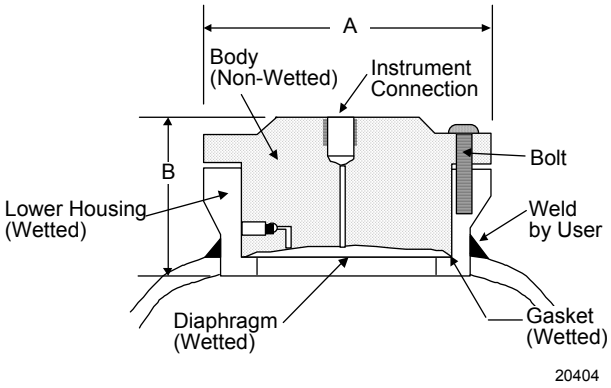

Figure 17. 4" or larger Saddle Seal

Model Selection Guide, cont.

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Industrial Measurement and Control
Honeywell International Inc.
16404 North Black Canyon Highway
Phoenix, Arizona 85053

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